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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/770,432

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Adam Leslie Clark

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SONNENSCHN NATH & ROSENTHAL LLP

P.O. BOX 061080

WACKER DRIVE STATION, SEARS TOWER

CHICAGO, IL 60606-1080

EXAMINER

AGHDAM, FRESHTEH N

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/770,432

**Applicant(s)**

CLARK, ADAM LESLIE

**Examiner**

FRESHTEH N. AGHDAM

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Arguments***

Applicant's arguments filed October 16, 2008 have been fully considered but they are not persuasive.

**Applicant's Argument(s):**

Regarding claims 1-20, the applicant argues that the claimed subject is not taught or suggested by Jefferey "encoding data values described by one or more multi-dimensional parameters , each of the multidimensional parameters having multiple constituent sub-parameters of more than one value; mapping the multi-dimensional parameters of the data values to respective one-dimensional parameters having one of the single sub-parameters, by which the multi-dimensional parameters will now be represented"

**Examiner's Response:**

Regarding the argument set forth above, the examiner disagrees with the applicant because the recited claimed subject matter is taught by Jefferey (see claims 1, 9, and 12).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-12, and 14- 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeffrey et al (US 7,346,220), and further in view of Freeman (US 6,373,890).

As to claims 1-2, 11-12, and 20, Jeffrey discloses a method and/ or apparatus comprising encoding data values described by one or more multi-dimensional parameters , each of the multidimensional parameters having multiple constituent sub-parameters of more than one value (pixel components/sub-parameters); mapping the multi-dimensional parameters of the data values to respective one-dimensional parameters having one of the single sub-parameters by which the multi-dimensional parameters will now be represented; and storing the encoded data values in a buffer (Fig. 11-12; Col. 8, lines 60-64; claims 1, 9, and 12). Jeffrey does not expressly teach creating a table of encoded data values in which the data values are represented by their respective encoded counterparts utilizing the one-dimensional parameters and in which redundant ones of the encoded data values share common table entries. Freeman teaches that if the encoded data value is already stored in the buffer, then it is only needed to store an index value for that encoded value in order to further compress/reduce the amount of data required to store the redundant ones of the encoded data values (Col. 3, lines 56-60; Col. 13, lines 5-10). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Freeman into the system/method of Jeffrey for the reason stated above.

As to claims 4-5 and 14-15, Freeman further discloses that the redundant ones of the encoded data values share common table entries (Col. 3, lines 56-67). Freeman does not expressly disclose whether the redundant ones of the encoded data values are identical or similar to one another within a tolerance range/ limit. One of ordinary skill in the art would recognize that the redundant ones of the encoded data values are either identical or are similar to one another within a tolerance limit. In addition, since the amount of the tolerance limit is not specified in the disclosure of the invention; therefore, the tolerance limit could be extremely close to zero or even zero. Moreover, one of ordinary skill in the art would recognize that if the redundant ones of the encoded data values are identical to one another, then the accuracy / resolution of compression/ decompression mechanism increases but on the other hand if the redundant ones of the encoded data values are substantially identical (e.g. similar to one another within a tolerance limit this means loosening the definition of redundancy), then the storage resources are increased. Therefore, it would have been obvious to one of ordinary skill in the art to choose either one of the definitions for redundancy (redundant ones of encoded data values) depending upon the desired design requirement.

As to claims 6 and 16, Jeffrey further discloses transmitting the encoded data values to a receiver (Fig. 12).

As to claims 7-9 and 17-19, Jeffrey teaches a methodology for reducing the bandwidth required to transmit image data by encoding/compressing the multi-dimensional parameters (pixels) to one dimensional parameter (data compression). Jeffrey and Freeman do not expressly teach decoding (reproducing or demapping or

reconstructing) the original data values (multi-dimensional parameters/pixels) by either transmitting a set of reference information (to use as a template) along with or prior to the encoded data values to recover/reproduce. However, one of ordinary skill in the art would recognize that it is well known in the art to reconstruct/reproduce the encoded/compressed signal (in data-aided methods) to either transmit a reference information (training signal) along with or prior to transmitting the encoded data to the receiver for decompression/reproduction of the original data in the receiver (it would be a design requirement to choose one over the other). Therefore, it would have been obvious to one of ordinary skill in the art to employ the data compression method of Jeffrey (with or without some other compression algorithm(s)) in communication systems for reducing bandwidth required for data transmission and utilizing one of the above methods to reproduce the original data values depending on the design requirement(s).

As to claim 10 and Freeman further do not expressly teach that the reference information is stored in a lookup table. However, one of ordinary skill in the art would recognize that when the reference information is transmitted prior to transmission of the encoded/compressed data values, it is stored in a memory that could be a lookup table or any other types of memory such as RAM or so forth, wherein it is beneficial to use a lookup table because of its simple lookup operation method. Therefore, it would have been obvious to use a lookup table to store the reference information for the reason stated above.

Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeffrey et al and Freeman, further in view of Lim (US 5,339,164).

As to claims 3 and 13, Jeffrey teaches a method/system for reducing the bandwidth required to transmit image data. Jeffrey and Freeman do not expressly teach that the data values comprise position information. However, one of ordinary skill in the art would recognize that the multi-dimensional data values that may be mapped/compressed for reducing the bandwidth required to transmit data other than pixel information such as position information as it is evidenced by Lim (Abstract; Col. 19, Lines 56-67) in order to minimize the amount of digital data required to adequately represent image and enhances the speed at which the data can be communicated (Col. 1, Lines 26-35). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Lim with Jeffrey and Freeman for the reason stated above.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRESHTEH N. AGHDAM whose telephone number is (571)272-6037. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Freshteh N Aghdam/

Examiner, Art Unit 2611



Art Unit: 2611

/Chieh M Fan/

Supervisory Patent Examiner, Art Unit 2611